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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,367	10/27/2003	Bin Zhang	200310832-1	5792

22879 7590 07/24/2008

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EXAMINER	
MORRISON, JAY A	

ART UNIT	PAPER NUMBER
2168	

NOTIFICATION DATE	DELIVERY MODE
07/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/694,367	ZHANG, BIN	
	Examiner	Art Unit	
	JAY A. MORRISON	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18 and 22-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9-14* is/are allowed.

6)☒ Claim(s) *1,15-18,22-26 and 28-30* is/are rejected.

7)☒ Claim(s) *2-8 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. Claims 1-18 and 22-30 are pending.

Allowable Subject Matter

2. Claims 9-14 are allowed.

3. Claims 2-8 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 18 and 22-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. These claims disclose a system or apparatus but do not describe hardware which executes each of the claimed steps, which is required for a system claim to be statutory. Accordingly, these claims are rejected as non-statutory for failing to disclose such hardware.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1,15-17 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zheng et al. ('K-Harmonic Means – A Data Clustering Algorithm', HP Laboratories Palo Alto, October, 1999) ('Zheng' hereinafter) in view of Arning et al. ('Arning' hereinafter) (Publication Number 2003/0145000).

As per claim 1, Zheng teaches

A processor-based method comprising: (see abstract)

selecting a set number of functions correlating variable parameters of a dataset (pages 1-2, section 1);

and clustering the dataset by iteratively applying a … algorithm and a K-Harmonic Means performance function on the set number of functions to determine a pattern in said dataset (pages 3-4, section 3).

Zheng does not explicitly indicate "regression".

However, Arning discloses "regression" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zheng and Arning because using the steps of "regression" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 15, Zheng teaches

A system, comprising: (see abstract)

an input port configured to receive data (page 1, Abstract);

functions correlating variable parameters of a set of the data (pages 4-5, section 5);

cluster the functions using a K-Harmonic Mean performance function (pages 3-4, section 3);

and repeat said … and cluster sequentially to thereby determine a pattern in said set of data (pages 4-5, section 5).

Zheng does not explicitly indicate "regress".

However, Arning discloses "regress" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zheng and Arning because using the steps of "regress" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 16, Zheng teaches

the functions on a dataset of the respective data source; cluster the functions using a K-Harmonic Mean performance function; and repeat said … and cluster sequentially (pages 3-4, section 3).

Zheng does not explicitly indicate "regress".

However, Arning discloses "regress" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zheng and Arning because using the steps of "regress" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 17, Zheng teaches

compute common coefficient vectors which compensate for variations between the … clustered functions representing the datasets, and wherein each of the processors of the data sources is configured to alter the functions by the common coefficient vectors (pages 4-5, section 5).

Zheng does not explicitly indicate "regressively".

However, Arning discloses "regressively" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zheng and Arning because using the steps of

"regressively" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 28, Zheng teaches

A processor-based method for mining data, comprising: (see abstract)

independently applying a regression clustering algorithm to a plurality of distributed datasets (pages 3-4, section 3);

developing matrices from probability and weighting factors computed from the … clustering algorithm, wherein the matrices individually represent the distributed datasets without including all datapoints within the datasets (pages 5-6, section 6);

determining global coefficient vectors from a composite of the matrices (pages 4-5, section 5);

and multiplying functions correlating similar variable parameters of the distributed datasets by the global coefficient vectors to thereby determine a pattern in said datasets (pages 4-5, section 5).

Zheng does not explicitly indicate "regression".

However, Arning discloses "regression" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zheng and Arning because using the steps of "regression" would have given those skilled in the art the tools to improve the invention

by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 29, Zheng teaches

repeating said independently applying, said developing, said determining and said multiplying (pages 4-5, section 5).

As per claim 30, Zheng teaches

calculating a residue error associated with the global coefficients prior to said multiplying (page 1, Abstract; pages 4-5, section 5).

8. Claims 18, 22 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zaki et al. ('Zaki' hereinafter) ('Workshop report: large-scale parallel KDD systems', ACM SIGKDD Explorations Newsletter, Volume 1, Issue 2, January 2000, Pages 112-114, ISSN: 1931-0145) in view of Zheng et al. ('K-Harmonic Means – A Data Clustering Algorithm', HP Laboratories Palo Alto, October, 1999) ('Zheng' hereinafter) and further in view of Arning et al. ('Arning' hereinafter) (Publication Number 2003/0145000).

As per claim 18, Zaki teaches

A system, comprising: (server, section 3.1)

a plurality of data sources (clusters, section 3.1);

Zaki does not explicitly indicate "and a means for … clustering datapoints from the plurality of data sources without transferring data between the plurality of data sources to thereby determine a pattern in data contained in said data sources and for applying a K-Harmonic Means performance function on the data".

However, Zheng discloses "and a means for … clustering datapoints from the plurality of data sources without transferring data between the plurality of data sources to thereby determine a pattern in data contained in said data sources and for applying a K-Harmonic Means performance function on the data" (pages 3-4, section 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Zheng because using the steps of "and a means for … clustering datapoints from the plurality of data sources without transferring data between the plurality of data sources to thereby determine a pattern in data contained in said data sources and for applying a K-Harmonic Means performance function on the data" would have given those skilled in the art the tools to improve the invention by making the performance function easier to optimize by an algorithm that is essentially insensitive to initialization. This gives the user the advantage of having better result through such optimization.

Neither Zaki nor Zheng explicitly indicate "regressively".

However, Arning discloses "regressively" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki, Zheng and Arning because using the steps of

"regressively" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 22, Zaki teaches

collecting dataset information at the central station from the plurality of data sources (data server, section 3.1)

Zaki does not explicitly indicate "determining a common coefficient vector from the collected dataset information and altering datasets within the plurality of data sources by the common coefficient vector".

However, Zheng discloses "determining a common coefficient vector from the collected dataset information and altering datasets within the plurality of data sources by the common coefficient vector" (pages 4-5, section 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Zheng because using the steps of "determining a common coefficient vector from the collected dataset information and altering datasets within the plurality of data sources by the common coefficient vector" would have given those skilled in the art the tools to improve the invention by making the performance function easier to optimize by an algorithm that is essentially insensitive to initialization. This gives the user the advantage of having better result through such optimization.

Neither Zati nor Zheng explicitly indicate "regression".

However, Arning discloses "regression" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zati, Zheng and Arning because using the steps of "regression" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 25, Zaki teaches

each of the processors within the plurality of data sources is configured to (cluster, section 3.2)

Zaki does not explicitly indicate "cluster a dataset within the respective data source".

However, Zheng discloses "cluster a dataset within the respective data source" (pages 3-4, section 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Zheng because using the steps of "cluster a dataset within the respective data source" would have given those skilled in the art the tools to improve the invention by making the performance function easier to optimize by an algorithm that is essentially insensitive to initialization. This gives the user the advantage of having better result through such optimization.

Neither Zati nor Zheng explicitly indicate "regressively".

However, Arning discloses "regressively" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zati, Zheng and Arning because using the steps of "regressively" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

As per claim 26,

Zaki does not explicitly indicate "collect information pertaining to the … clustered datasets and based upon the collected information, calculate common coefficient vectors which balance variations between functions correlating similar variable parameters of the … clustered datasets".

However, Zheng discloses "collect information pertaining to the … clustered datasets and based upon the collected information, calculate common coefficient vectors which balance variations between functions correlating similar variable parameters of the … clustered datasets" (page 4-5, section 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Zheng because using the steps of "collect information pertaining to the … clustered datasets and based upon the collected information, calculate common coefficient vectors which balance variations between functions correlating similar variable parameters of the … clustered datasets" would have given those skilled in the art the tools to improve the invention by making the performance function easier to optimize by an algorithm that is essentially insensitive to

initialization. This gives the user the advantage of having better result through such optimization.

Neither Zati nor Zheng explicitly indicate "regressively".

However, Arning discloses "regressively" (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zati, Zheng and Arning because using the steps of "regressively" would have given those skilled in the art the tools to improve the invention by using current data mining techniques. This gives the user the advantage of having better returned results.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zaki et al. ('Zaki' hereinafter) ('Workshop report: large-scale parallel KDD systems', ACM SIGKDD Explorations Newsletter, Volume 1, Issue 2, January 2000, Pages 112-114, ISSN: 1931-0145) in view of Zheng et al. ('K-Harmonic Means – A Data Clustering Algorithm', HP Laboratories Palo Alto, October, 1999) ('Zheng' hereinafter).

As per claim 24, Zati teaches

A system, comprising: (server, section 3.1)

a plurality of data sources each having a processor configured to access datapoints within the respective data source (wide-area distributed data mining, section 3.1);

a central station coupled to the plurality of data sources and comprising a processor, wherein the processors of the central station and plurality of data sources are collectively configured to (data server and clusters, section 3.1-3.2).

Zati does not explicitly indicate "mine the datapoints of the data sources as a whole without transferring all of the datapoints between the data sources and the central station to thereby determine a pattern in datapoints contained in said data souces".

However, Zheng discloses "mine the datapoints of the data sources as a whole without transferring all of the datapoints between the data sources and the central station to thereby determine a pattern in datapoints contained in said data souces" (data mining, page 1, Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Zheng because using the steps of "mine the datapoints of the data sources as a whole without transferring all of the datapoints between the data sources and the central station to thereby determine a pattern in datapoints contained in said data souces" would have given those skilled in the art the tools to improve the invention by making the performance function easier to optimize by an algorithm that is essentially insensitive to initialization. This gives the user the advantage of having better result through such optimization.

Response to Arguments

10. With respect to claims 1, 15-18, 22-23 and 28-30, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper

hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

11. With respect to claims 24-26, Applicant argues that Zhang does not disclose "mine the datapoints of the data sources as a whole without transferring all of the datapoints between the data sources and the central station to thereby determine a pattern in datapoints contained in said data sources". Respectfully, it is noted that Zhang discloses data clustering as a common technique in data mining (abstract), and this clustering uses an averaging function to determine results and thereby does not have to transfer all of the datapoints. It is therefore respectfully submitted that Zhang discloses the limitation.

Conclusion

12. The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168

Jay Morrison
TC2100

Tim Vo
TC2100

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/694,367	ZHANG, BIN	
	Examiner	Art Unit	
	JAY A. MORRISON	2168	